What is claimed is:

1. A process for measuring pressure buildup in one or more body compartments that encases muscular tissue, comprising the steps of:

assessing a body compartment configuration; and,

identifying the effect of pulsatile components on at least one dimension of the body compartment.

2. The process of claim 1, wherein the step of assessing a body compartment configuration comprises means for activation and reception of ultrasonic waves.

3. The process of claim 1, wherein the step of assessing a body compartment configuration comprises identifying characteristics of the body compartment selected from the group consisting of the blood vessel network, compartment boundary and combinations thereof.

4. The process of claim 3, wherein the step of assessing a body compartment configuration comprises identifying blood vessel network characteristics of the body compartment through a broadband ultrasonic transmit/receive transducer.

5. The process of claim 3, wherein the step of assessing a body compartment configuration comprises identifying compartment boundary characteristics of the body compartment through a pure-tone ultrasonic transmit/receive transducer.

6. The process of claim 1, wherein the step of identifying the effect of pulsatible components on the at least one dimension of the body compartment includes means for capturing temporal reception of ultrasonic waves.

7. The process of claim 6, wherein the means for capturing temporal reception of ultrasonic

waves includes means for processing the temporal reception of ultrasonic waves.

8. The process of claim 1, further comprising the step of placing the body compartment at maximum distension prior to assessing the body compartment configuration.

9. The process of claim 1, wherein the body compartment comprises a tubular shaped collagenous membrane selected from the group consisting of arm, leg, other muscle groups and combinations thereof.

10. A method for preventing tissue necrosis comprising the process of claim 1.

11. An incision product produced by determining the presence of Compartment Syndrome from the process of claim 1.

12. A non-incision product produced by determining the absence of Compartment Syndrome from the process of claim 1.

13. An apparatus for measuring pressure build-up in one or more body compartments that encases muscular tissue, comprising:

(a) a transmitting device for imparting ultrasonic waves into the one or more body compartments;

(b) means for positioning the transducer adjacent to the one or more body compartments effective for imparting ultrasonic waves therein;

(c) means for capturing reflections of the imparted ultrasonic waves and converting the reflected waves into electrical signals;

(d) means for mathematically manipulating the electrical signals; and,

(e) means for categorizing pressure build-up in the one or more body compartments from

the mathematical manipulations.

14. The apparatus of claim 13, wherein the transmitting device comprises a transducer.

15. The apparatus of claim 13, wherein the means for placing the transducer comprises a gel.

16. The apparatus of claim 13, wherein the means for capturing comprises a retention means selected from the group consisting of storage, display, analysis and combinations thereof.

17. The apparatus of claim 13, wherein the mathematical manipulation of the electrical signals comprises Fourier Transform manipulation.

18. The apparatus of claim 13, wherein the means for categorizing pressure build-up further comprises means for identifying a decrease in the captured imparted ultrasonic waves.

19. The apparatus of claim 13, wherein the means for categorizing pressure build-up further comprises means for identifying a ratio of low-frequency amplitudes to high frequency amplitudes present in the mathematical manipulation.

20. The apparatus of claim 13, wherein categorizing pressure build-up in one or more body compartment comprises a body compartment selected from the group consisting of arms, legs, other muscle groups and combinations thereof.

21. The apparatus of claim 13, wherein the means for capturing comprises a receiver.

22. The apparatus of claim 13, wherein the means for categorizing pressure build-up comprises means for assessing a body compartment configuration and identifying the effect of

pulsatile components on at least one dimension of the body compartment.

23. The apparatus of claim 22, wherein the means for categorizing pressure build-up further comprises a time-reversal technique.

24. An apparatus for measuring pressure build-up in one or more body compartments that encases muscular tissue, comprising:

(a) a transmitting device for imparting ultrasonic waves into the one or more body compartments;

(b) means for positioning the transducer adjacent to the one or more body compartments effective for imparting ultrasonic waves therein;

(c) a receiver for capturing reflections of the imparted ultrasonic waves;

(d) means for mathematically manipulating the ultrasonic waves captured by the receiver; and,

(e) means for categorizing pressure build-up in the one or more body compartments from the mathematical manipulations.